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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,280	07/18/2006	Tohru Ono	SIW-103US	4214

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LAHIVE & COCKFIELD, LLP
FLOOR 30, SUITE 3000
ONE POST OFFICE SQUARE
BOSTON, MA 02109

EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
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3618

MAIL DATE	DELIVERY MODE
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10/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,280	Applicant(s) ONO ET AL.	
	Examiner Frank B. Vanaman	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Applicant's amendment, filed June 9, 2009, has been entered in the application. Claims 1-5 are pending with claim 5 being newly added.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (US 6,378,637, cited by applicant) in view of Kondo (US PGPub. 2003/0070858, cited by applicant), Chernoff et al. (US 6,843,336, cited previously) and Matsuura et al. (US 5,460,234). Ono et al. (see figure 7) teach a vehicle with a vehicle floor (15a) and a surrounding periphery which may be defined as constituting an outward-most extent of a vehicle sill, such as associated with the vehicle doors, and/or structural elements which support the periphery, at least a pair of longitudinally extending floor frame members (14L, 14R), a fuel cell unit (3), an auxiliary unit (2 and/or 8) adjacent one side of the fuel cell in a longitudinal direction of the vehicle and an electrical storage unit (7) adjacent the fuel cell such that the auxiliary unit, fuel cell and electrical storage unit are disposed 'in that order' in a longitudinal vehicle direction, the vehicle additionally including a high voltage component (21, 22) at least one of which (22) being laterally positioned with respect to the storage device, the arrangement including further elements (4, 5) mounted laterally exteriorly of the longitudinal frame elements between the frame elements and external periphery of the vehicle.

The reference to Ono et al. fails to teach that each of the fuel cell, storage unit and auxiliary unit are sandwiched from both sides by vehicle frame cross-members. Kondo teaches that it is well known to provide plural fuel cell-related devices (23, 50, 50) each separately sandwiched between laterally extending vehicle frame members (43) connected to longitudinally extending frame members (42) by pairs of brackets (45) and wherein the cells or related apparatus may be protected by under-cover portions (44). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide each of the fuel cell related elements taught by Ono et al. to each be sandwiched by cross members as taught by Kondo for the purpose of structural

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compartmentalization (e.g., providing each element with a separate surrounding frame, and to protect the fuel cell components in the event of an unexpected deformation of elements of the vehicle frame (see Kondo at paragraph 0040).

The reference to Ono et al. as modified by Kondo fails to teach that each of the fuel cell, storage unit, and auxiliary unit are sandwiched each between separate pairs of cross members. Chernoff et al. teaches that it is well known to provide vehicle cross members as member pairs (e.g., see elements 34, 36, 38, 40, etc., figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the cross members taught by the modifying reference to Kondo as applied to Ono et al. as respective pairs of cross members as taught by Chernoff et al., for the purpose of reducing solid wall partitioning in the chassis (e.g., note that the cross members taught by Kondo are solid bar elements, while the two-element cross members taught by Chernoff et al. are spaced bar elements which provide access space in between them), the use of the pair of bar elements rather than a single bar element constituting a replacement of one well known structural element with an equivalently functioning pair of well known elements, the replacement serving to facilitate access from section to section (for example for passing tubing or passing wiring during construction of the vehicle, or manual access when repair and/or maintenance is done). Such a replacement would result in each cross member (e.g., those replacing elements 43 in Kondo) constituting a pair of cross members, such that each longitudinally separated region would be definable as extending between separate pairs of cross members.

The reference to Ono et al. as modified by Kondo, and Chernoff et al. fails to specifically teach the use of pairs of brackets connecting the fuel cell unit additionally to the cross members, and wherein the fuel cell is provided with an under covering wherein the first and second pairs of brackets are flanges extending from the under covering. Matsuura et al. teach that it is well known to carry a vehicle power source in a container having an under covering (72, 73) wherein mounting brackets (74, 75, 76, see figure 2) are connected to the under covering and extend upwardly and outwardly to form flanges (e.g., portions 74), the mounting brackets being positioned on both lateral

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and longitudinal sides of the container, and are connected to both longitudinally extending frame portions as well as laterally extending cross members of the frame (6, 6₁). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide both longitudinally and laterally located brackets as suggested by the power supply mounting arrangement disclosed by Matsuura et al. for connecting the fuel cell to the cross member elements of the vehicle taught by Ono et al. and modified by Kondo and Chernoff et al., rather than just pairs of lateral brackets, for the purpose of distributing the weight of the fuel cell over a larger number of mounting elements, thus beneficially reducing the per-bracket weight load, and/or for the purpose of providing both longitudinal and lateral support for the fuel cell, beneficially reducing the potential of movement of the fuel cell with respect to both lateral and longitudinal directions. Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to house the fuel cell in a container having an under covering from which the brackets extend, as taught by Matsuura et al., for the well known purpose of providing a lower mounting surface to accommodate the physical mounting of the fuel cell (such as on the interior floor of the container) and/or to allow plural fuel cell components to be accommodated and/or to provide insulation from exterior conditions for the fuel cell in order to improve its operation.

As regards claims 3 and 4, the references to Ono et al. as modified by Kondo, Chernoff et al. and Matsuura et al. fail to specifically teach that the elements mounted exteriorly of the frame portions constitute high voltage components. Ono et al. teach a further embodiment (see figure 2) where the storage unit is larger and extends further in a lateral direction, but fails to specifically teach a location for the high voltage component. Initially, Ono et al. already teach that it is well known to locate further components exteriorly of the longitudinal frame members and interiorly of the peripheral sill (phantom lines 11), and in that the space occupied by the high voltage component in the embodiment of figure 7 would not be available due to the increased size of the storage element, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the high voltage component in the space exterior of the

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longitudinal frame elements and interior of the periphery so as to allow the accommodation of the larger electrical storage element.

Response to Comments

4. Applicant's comments filed with the amendment have been carefully considered. Applicant has asserted that the references previously applied fail to teach all limitations of the claims. In this case, the examiner agrees. Note the references to Chernoff et al. and Matsuura et al., now applied in direct response to applicant's amendment. Chernoff et al. reasonably teach that a cross member may be made of plural cross elements and Matsuura et al. teach that it is well known to mount an electric power supply arrangement in a container having an under-cover from which brackets are upstandingly arrayed, and wherein the brackets are arranged on both longitudinal and lateral sides of the supply to ensure secure mounting in both longitudinal and lateral directions

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on

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access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618

/Frank B Vanaman/
Primary Examiner, Art Unit 3618